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THE ROYAL COMMISSION ON VIVISECTION.

After sitting for 5½ years and holding more than 70 meetings, this Commission has at last issued its Report, which may quite fairly be called, as it has already been called "on the whole a complete vindication of vivisection." It is important to note that the main Report is signed by all the eight surviving members of the Commission, though three have only signed it subject to special reservations set forth in appended Memoranda. All three of these members—Col. Lockwood, Sir William Collins, and Dr. George Wilson—sign the first Memorandum of 8 pages long; the second and much longer one is signed by Dr. Wilson alone,

Almost all that need be said of Dr. Wilson's independent report is that he is much less inclined to attach value to the results of animal experimentation than his fellow-Commissioners. This is not surprising, as he also disbelieves in the utility of the diphtheria anti-toxin, and considers the germ or microbial theory of acute infectious disease, as well as the serum and vaccine treatment based upon it, illogical. But even Dr. Wilson's pathological views have not prevented him from signing the main Report with his colleagues.

That main report covers so much ground that we can only very briefly summarise its chief findings. First the history of the present Act and its working, and the accusations of anti-vivisectionists against the latter, are considered. Certain specific charges are weighed and found wanting, the charitably expressed conclusion being "that the witnesses have either misapprehended or inaccurately described the facts of the experiments." The Commissioners find that "with rare exceptions" the experimenters have conscientiously endeavoured to abide by the law; and then, after a stricture upon the misleading character of many anti-vivisectional descriptions and illustrations, it is plainly said "To represent that animals subjected to experiments in this country are wantonly tortured would, in our opinion, be absolutely false." Considering how constantly that very representation is made, this unanimous sentence is significant in the extreme.

Turning to the utility of vivisection, the Commissioners conclude that it has yielded valuable knowledge which probably could have been acquired in no other way, and may be expected to continue to do so. This conclusion of facts leads them to the opinion that "experiments upon animals, adequately safe-guarded by law, faithfully administered, are morally justifiable and should not be prohibited by legislation." Finally, they consider the means of minimising the animal suffering attendant upon experimentation; and, while opining that the present Act has been "so worked as to secure a large degree of protection to animals subject to experiment, and at the same time so as not to hamper or impede research," they submit a series of recommendations as further safeguards. These comprise an increase in the inspectorate (up to four whole-time inspectors for Great Britain), further and stricter provisions regarding the now little used curare, the definition and practice of pithing, and the destruction of suffering animals, with some changes in the constitution of the Advisory Body to the Secretary of State, and provision for special records by experimenters in certain cases. Not one is revolutionary.

The short Lockwood-Collins-Wilson Reservation Memorandum only differs from the main Report in a few particulars. The memorandists recommend that the responsibility of the Secretary of State be increased (making it an undivided responsibility) and that the "pain condition"—the obligation to destroy suffering animals—be made still more stringent. These—their chief points, they think require a new Act of Parliament, but they add two or three minor ones, one of which we emphatically endorse. The main Report holds it essential that Inspectors under the Act should be qualified medical men. The memorandum would extend eligibility to men qualified in veterinary medicine and science. Certainly veterinarians should make as efficient inspectors as medical men, and, in the case of some experimental animals, much more so.

Upon the whole the Report proposes to alter very little. Study of the history of more than thirty years experimentation has naturally suggested some improvements to the Commissioners. These, if acted upon, will probably save some animal suffering, without at all impeding research. But the most striking feature in the Report is its crushing disproof of the allegations of popular anti-vivesectionism—a disproof all the more complete from the known anti-vivisection leanings of some of the Commissioners.

MILK AND MILK PRODUCTS.

The whole question of the composition of milk, and the products which can be manufactured from it, and the problems arising from its easily destructible nature forms an interesting subject.

Several of the foods of which milk is the basis, such as cheese, have probably been known ever since man first domesticated milk-yielding animals, but during the last few years scientific research has enabled modified and new food substances to be manufactured from milk.

Average composition of cow's milk. The following is the percentage composition of an average sample of good milk, calculated from the results of 200,000 analyses made in the laboratory of the Aylesbury Dairy Co., London.

Water	87·2
Fat	3·9
Milk sugar	4·75
Proteids	3·4
Ash	·75

Occasionally wide variations are found ranging in the case of the fat from a maximum of 12·52 per cent. to a minimum of 1·04 per cent., and in

the case of solids other than fat, 10·6 per cent. to 4·9 per cent.

These examples must be taken as very abnormal milks; but such possibilities, nevertheless, render it very difficult to determine whether any particular sample has or has not been adulterated.

Legal standard. Under the Sale of Food and Drugs Acts the Board of Agriculture and Fisheries was given power to fix limits for the composition of milk, and in 1901 the Board issued regulations by which a sample of milk which contains less than 3 per cent. of fat or less than 8·5 per cent. of non-fatty solids shall be presumed for the purposes of the Acts, until the contrary is proved, to be not genuine, by reason of the abstraction of milk fat or non-fatty solids (as the case may be), or the addition of water.

The physical composition of milk is of considerable interest, particularly in regard to the fat. It exists in the form of spherical particles. It has been suggested that each particle is surrounded by a slight membrane, and another suggestion is that no real membrane exists, but that a gelatinous skin surrounds the particles. The fat is obtained from milk either by allowing it to stand, when a mixture much richer in fat is obtained, or by the employment of a separator.

The separator is a modern invention, which by rapid revolution forces the heavier portions of the milk towards the wall of the receptacle, leaving the lighter portion—the cream—in the centre. The separated fluids are run off while the machine is in motion—the rate being about 6000 revolutions per minute. The separator, however, does more than merely separate the cream from the milk, for it does much towards ridding the milk of solid impurities. What is called separator slime is formed on the walls of the revolving cylinder, and this consists of hair, dust, cobwebs, pieces of straw, particles of cow dung, micro-organisms—in fact scraps of every sort possible in a cowshed. To strip off the tough, elastic layer from the metal, it is necessary to use a strong scraper.

It forms part of the duties of the Sheffield veterinary officials to regularly inspect the separators that are being used in the city.

After separation the milk and cream can be, and are often re-mixed. The removal of the impurities increases the keeping qualities of the milk, and the reasons for this may be that during the process the non-germinal dirt removes mechanically a large percentage of bacteria, or that the dirt removed reduces the nutrient quality of the medium.

Whichever may be the cause of the better "keeping," one fact stands out prominently, viz., the ordinary cowshed or dairy sieve does not remove any but the major varieties of dust particles.

The composition of separated milk is as follows:

Water	per cent.	90·0
Fat		·2
Casein		3·5
Albumen		·5
Milk sugar		5·0
Mineral matter		·8

In some districts farmers and dairymen consider separated milk an excellent food for animals.

The only actual dairy product made from separated milk is a poor type of cheese, made on very much the same lines as the Dutch Gonda or Edam; but even then it is more general to return a small proportion of the fat to the milk before renneting.

Starters are usually made by stirring the culture powder into pasteurised separated milk.

Biscuit makers and bakers use separated milk and the price they usually pay is 3d per gallon.

Casein is the important nitrogenous matter in milk, and is prepared in the following mannner. The milk is warmed, and the curd is precipitated by the addition of dilute sulphuric acid or acetic acid, after which it is treated by one of two processes. The acid is syphoned off, the curd thoroughly washed, and the liquid decanted. The curd or casein is then heavily pressed, and afterwards removed to a drum with several revolving beaters inside, which speedily reduce the damp mass of curd to small fragments. These are again removed, and are desiccated at about 150 deg. for 24 hours. The result is a light yellow powder, very similar to maize flour.

By the alternative method, after the curd has been precipitated, it is washed and redissolved in a small quantity of an alkaline solution. It can then either be dried at once or again precipitated by acid, and once more dissolved in an alkali, afterwards being evaporated as before. The powdered casein can be used, like milk powder, for the manufacture of cakes or bread.

It is also the chief component of such quasi-medical products as Plasmon, Nutrose, Sanatogen, Tilia, Enlactol and Bucasin, which proves to a certain extent that it is a nutritious food.

Prepared with formaldehyde, after being precipitated by metallic salts, instead of acids, a very durable substance known as Galalith or Lactoform, is produced, which is used as a substitute for bone, ivory, shell, horn and even celluloid, while it lacks the inflammable characteristics of the latter.

Lacterin is another casein product, but is generally prepared from buttermilk. It is used dissolved in ammonia, for fixing the colours in calico-printing. The American "cheese-paint" is also prepared from casein mixed with lime, and is said to make a very powerful whitewash. Casein powder is sometimes used in the manufacture of paper.

Casein can be rendered soluble by means of a little sodium carbonate, and as its food value is weight for weight four or five times that of the best beef, it is extremely valuable as an addition to many dishes.

When casein can be made more cheaply it will, from considerations of transport, probably form an important part of campaigning rations, for it is the most concentrated nitrogenous food with which we are acquainted.

Cheese is closely allied to casein. In fact, a cheese from skim milk is only an impure form of casein, ordinary cheese being a mixture of casein

and cream, the sugar having been eliminated from the milk.

What is known as "cream cheese" is merely cheese made from milk which has had extra cream added to it, and so contains a larger proportion of fat.

Butter.—Amongst other products derived from milk, butter is perhaps the most prominent and the best known.

What is known as butter-milk is simply the liquid which is left when the fat of the cream has been churned into butter. The globules of the fat have coalesced and left the liquid behind which contains some casein and sugar.

Condensed milk was first prepared by the American, Gail Borden, in 1856. It is obtained by boiling down milk so as to remove a large proportion of the water it contains. The operation is carried out at a temperature of 40° to 50° C., and the evaporation goes on till the volume is reduced to a third or a fourth of the original. Great care is exercised in the evaporation, for otherwise the milk sugar crystallizes out, and this causes the condensed milk to feel "sandy" on the tongue. On the market there are sweetened and unsweetened condensed milks, ordinary cane sugar or glucose being used if the former state is desired.

The manufacture of condensed separated milk has been going on for some time, and this material is sold in large quantities in this country. There being little cream in this condensed separated milk the product is of corresponding lower value.

In the course of his duties as a food inspector the present writer sees a very large number of tins of condensed milk which are unfit for human food, and considers that it would be in the interest of the public health if the makers of condensed milk were compelled to label their products "Unfit for the food of infants." It would also be advisable to place the date of manufacture on the label.

Dried milk or milk powder is prepared by evaporating milk to dryness. It contains all the constituents of milk except the water. A good dried milk when stirred with water ought to give a fluid which, in taste and appearance as well as in its chemical and physical properties exactly resembles milk. Up to the present, separated milk has been used in far larger quantities for this preparation than whole milk, for the material made from the latter has not found such a ready sale. In order to give a greater stability to the emulsion which is formed on dissolving milk powder prepared from whole milk in water, either 1 to 3 per cent. Sodium Bicarbonate, or 2 per cent. sugar is added.

Other milk products.—In addition to the products described above there are others which are used for special dietetic purposes.

One of these, Koumiss, was originally made from mares' milk by the Tartars. It is produced by a set of fermentations, including the alcoholic fermentation of the milk sugar, together with the ordinary souring of milk. There are various kinds of Koumiss and the substance is claimed to be a food and stimulant at the same time. It is given in cases where practically no other food can be absorbed.

Kephir is a similar preparation to Koumiss, but the fermentations necessary in its manufacture are set up in milk by grains of kephir. Freudenreich, of Bern, has isolated four micro-organisms in grains of kephir and states that none of these microbes is alone able to bring about the kephir fermentation. There is clearly a true symbiosis amongst the four different organisms.

In Armenia a thick substance called "Mazoun" is made which appears to be sour milk mixed with cream.

"Leben" is the name applied to a sour milk beverage prepared in Egypt.

A milk preparation called "Yoghurt" has come into prominence recently because of the Bacillus Bulgaricus which it contains. This organism is a very powerful exciter of lactic acid fermentation and, according to Metschnikoff, it acts as a sort of disinfectant in the large intestine, and thereby checks the chronic toxic poisoning caused by the putrefactive organisms. Metschnikoff, who is of the opinion that the putrefactive fermentation which usually takes place in the large intestine tends to shorten life, and that if these putrefactive changes could be checked human life would be prolonged, recommends the use of milk containing the Bacillus Bulgaricus. The unusually long life enjoyed by many of the Bulgarian country population would thus be explained, for they are known to consume large quantities of Yoghurt daily. Cultures of the micro-organisms present in Yoghurt can now be bought. By allowing the milk to become partially sour, and then adding some of the culture, Yoghurt can be obtained in a few hours if the temperature is kept at about 40°C.

W. Jackson Young, F.R.C.V.S., D.V.S.M. (Vict)
Sheffield.

ABSTRACTS FROM FOREIGN JOURNALS.

The Value of Oil in Peritoneal Surgery.

Glimm, by experiments on dogs and guinea-pigs, has demonstrated the favourable effect of oil upon the course of peritonitis. Olive oil and other oils, in peritonitis caused by the *Bact. coli*, check in a high degree the resorption of bacteria into the circulation, while the oil is well tolerated by the peritoneum.

Glimm's results have induced Hirschel, at the surgical clinique at Heidelberg, to use camphor-oil (1 per cent.) intra-peritoneally after the performance of laparotomy in some severe cases of peritonitis in human beings. His results have been excellent. His procedure is first to remove the masses of peritonitic exudate by means of pieces of gauze, either dry or moistened with saline solution.

He then introduces camphor-oil up to a quantity of 100 grammes (about 3 1-3rd oz.) into the peritoneal cavity; and distributes and spreads it everywhere (viscerally and parietally) by means of pieces of lint.

In the most recent times, oil therapy of the peritoneum has assumed great importance. One report by Kolb, who used it in 53 cases of lapa-

rotomy, is exceedingly favourable; for only one of these cases terminated fatally.

Prof. Karl Keller, of Vienna, now reports (*Zeitschrift für Tiermedizin*) his experience of the method in three bitches, in all of which laparotomy was necessary. The first case was one of torsion of the uterus with peritonitis. The second was a case of extensive peritonitis arising from metritis, and was further complicated during the operation (extirpation of the uterus) by a purulent infection of the peritoneal cavity. All three cases were thus severe ones. All three recovered, and in each case Keller attributes the favourable result to the oil treatment.

In a fourth case the treatment proved useless; the patient, a bitch, being *in extremis* when operated upon. Section of the abdomen was followed by the escape of a large quantity of greenish-brown, turbid, foul-smelling liquid, mixed with shreds of placenta. The uterus contained putrid pups and was gangrenous in various places, at one of which rupture had occurred. The bitch died six hours after operation.

In addition to its effect in checking resorption, the oil introduced into the peritoneal cavity always creates a nidus unfavourable to the growth of pathogenic bacteria. Keller considers that paraffin oil in particular, on account of its chemical composition, possesses this special effect. He therefore uses paraffin oil sterilised by heat, employing about 50 grammes (approximately 1 2-3rd oz.) for each case.—(*Berliner Tier. Woch.*).

A Practical Method of Inducing Horses to Swallow Fluids.

The administration of fluid medicines to the horse is always a laborious task. Very often the animal resists swallowing the liquid, so that the greater part escapes again from the mouth. Combaret commends (*Bullet. de la Soc. Cent. de Méd. Vét.*) a method which he has now used for a long time, and which has always rendered him good service.

The horse's head is held up in the usual manner; and the administrator, standing upon an elevation, pours in the fluid from the side, introducing the neck of the drenching bottle over the tongue. As soon as a certain quantity of fluid is in the mouth and the horse refuses to swallow, a very little clean. lukewarm water is poured into one of the nostrils. The water, by its contact with the nasal mucous membrane, immediately induces a reflex action which causes the horse to swallow the mouthful. This manipulation is repeated until the whole draught is swallowed, and the result is that not a drop is lost.

It is important to take only a very little water—about three to four tablespoonsful—and to discontinue its instillation into the nostril immediately the horse has swallowed.—(*Berliner Tier. Woch.*)

W. R. C.

[We all know the difficulty of inducing some horses to swallow draughts. I have never heard of this method of combating it before, and think it would be worth trying. But it seems to me—and the author seems indirectly to admit—that it is not altogether a safe method in the hands of stable attendants.—*Transl.*]

VETERINARY ASSOCIATION OF MANITOBA.

The annual meeting was held in the Council Chamber of the City Hall, Brandon, on Tuesday, March 5th, at 9 a.m. The President, Dr. S. A. Coxe, occupied the chair, and the following members were present: Messrs. S. Robinson, W. E. Martin, W. R. Taylor, J. McDougall, W. H. T. Lee, M. B. Stiver, J J. Kelliher, M. J. Preston, W. Leslie, J. Mack, W. A. Dunbar, C. D. McGilvray, I. B. Irwin, F. Torrance, H. Bradshaw, W. H. Smith, J. Young and F. M. Coombs.

The reports of the auditors and of the Secretary-Treasurer and Registrar showed that the affairs of the Association were progressing satisfactorily in most respects, but that the reserve fund had been seriously depleted by several unusual expenditures during the past three years. Some discussion ensued as to how this state of affairs could best be remedied, and it was finally decided that the annual fee should be raised from two dollars to four dollars.

The election of officers resulted as follows:—

President.—Dr. W. R. Taylor, Portage-la-Prairie.

Vice-President.—Dr. C. D. McGilvray, Winnipeg.

Secretary-Treasurer and Registrar.—Dr. F. Torrance, Winnipeg.

Examiners.—Drs. W. E. Martin, C. D. McGilvray, and F. Torrance.

Members of the Council.—Drs. S. A. Coxe, T. C. Lee, and Henry Bradshaw, in addition to the above.

Auditors.—Drs. Woods and Little were appointed for the ensuing year.

It was decided to hold the semi-annual meeting in the City of Winnipeg, in the Agricultural College, during the Midsummer Fair. The annual meeting will also be held during the coming year in Winnipeg.

Dr. Lee brought to the notice of the members a recent experience in which he had accidentally used sulphuric ether instead of cocaine solution when injecting a local anæsthetic for the operation of firing. The horse stood the operation much better than is usually found when cocaine is injected. There was absolutely no indication of feeling in the part, and the Doctor was surprised to find out that it was not cocaine he had been using.

A paper by Dr. Stanley Martin on "Enterectomy and Anastomosis of the Intestine of the Dog" was, in absence of the essayist, read by Dr. Dunbar.

Dr. McGilvray presented an interesting paper upon "Hog Cholera," in which he described outbreaks that he had seen and measures taken to suppress them.

The members discussed the subject very thoroughly and some interesting points in connection with the diagnosis of the disease were elicited.

Dr. Martin asked if the essayist considered that the outbreak of disease had any connection with the invasion of rats.

Dr. McGilvray did not think that rats would have been responsible for the recent outbreak, the fact that there were no rats known to be at Kenora, where there was an outbreak, renders this theory entirely untenable.

Dr. Coxe asked if there was any one diagnostic symptom that could be depended upon? Any lesion that was always present? He also suggested that it might be well if the Department of Agriculture would notify the practitioners of any outbreaks of disease.

Dr. McGilvray replied that as a servant of the Department he was obliged to carry out the policy that was imposed by those above, and although he might feel disposed to give information that was possible, still he had to recognize the fact that publicity was not always desirable. The Live stock industry might easily be affected by rumours originating from information carelessly given out. As to diagnostic symptoms, no one lesion could be depended upon with the exception of

the characteristic ulceration of the bowels, but, unfortunately, this condition is not seen except in chronic cases. The speckled colour of the kidneys is also an indication, but he considered the appearance of the lymphatic glands more characteristic than this. These were swollen and dark red, and had been likened to "strawberries with pimples on them." Ulceration of the bowels is usually found about the ileo-caecal valve, and the observer must not be confused by the appearance of the group of glands surrounding this part. Diagnosis is difficult in many cases, sometimes it is necessary to quarantine for a time before a diagnosis can be reached.

Dr. DUNBAR said that he had listened with great interest to the remarks that had been made, and con gratulated the essayist upon the excellence of the paper which he had presented to the meeting. He had seen the first outbreak of hog cholera in Manitoba 26 years ago. He was then acting for the Dominion Government. The outbreak occurred in a piggery in Kildonan, where the owner had 350 hogs kept under the most filthy conditions imaginable. The food on which these animals subsisted was of the most horrible kind that can be imagined, even night-soil being included. The owner was unwilling to do anything, and the outbreak finally resulted in him losing all of his pigs but 50. Ulceration of the bowels was the chief lesion. This is a very important question to Manitoba, and veterinarians cannot be too well informed thereon. He had much pleasure in moving a vote of thanks to Dr. McGilvray.

Dr. MARTIN seconded the motion, and asked whether the Department advocated the use of serum.

Dr. MCGILVRAY replied that the Department does not advise the use of serum. This is a matter of policy —the slaughter of hog cholera cases was decided upon as best policy for Canada, as the outbreaks were not widespread and were confined to certain limits. Serum is used largely in the United States as a palliative and preventive measure.

Dr. I. B. IRWIN, of Stonewall, reported an interesting case of a cow which developed at intervals a very peculiar chain of symptoms, indicating some peculiar condition affecting the central nervous system. During attacks the animal would walk around in a circle, and in the intervals between attacks appeared to be perfectly normal. The cow made a recovery.

The members present suggested various possible causes.

Dr. COXE was of the opinion that it might have been a case of strychnine poisoning.

Dr. MARTIN suggested that it might have been caused by indigestion, the symptoms developing from toxins produced by decomposing ingesta.

Dr. LESLIE had seen a similar case in a horse. Poisoned wheat had been distributed round a field for poisoning gophers, and the horse had eaten some of this. This horse had spasms every hour for about twelve hours and finally died.

Dr. LEE had seen a similar case in a cow, but in this case it was strychnine poisoning. Spasms occurred about an hour apart and the cow finally recovered.

Dr. TORRANCE congratulated the essayist upon the way in which he had presented the paper. He considered that as a literary production it was one of great excellence He thought that one of the symptoms presented by the cow could hardly be explained on the grounds of strychniue poisoning, that was the circular movements of the cow. As a rule strychnine poisoning did not produce this circular progression. He had much pleasure in moving a vote of thanks to Dr. Irwin, which was seconded by Dr. Coxe, and carried.

Dr. COXE introduced the question of the desirability of sewing accidental wound. In his opinion a wound must be a bad one and in a bad place, or he would not sew it up. He finds that wounds do better if not stitched. Dr. Martin was of opinion that the average wound would do as well unstitched, but there are many wounds that require stitching. The owner in most cases imagines the veterinarian is not doing his duty if he does not stitch the wound. If we don't do it someone else will, and in may cases the wound is stitched for the reason that the owner expects it to be done. Stitches retain secretions, and in many cases do more harm than good.

Dr. DUNBAR thought that wounds did as well without stitches, horizontal wounds especially are much better without stitches. Stitches, however, are often necessary, and owners are hard to persuade of the uselessness of stitches.

Dr. COXE did not allow the owner to dictate to him how a case was to be treated. If he thought a wound was better without stitches, it didn't matter what the owner said, he wouldn't stitch it. He considered in most cases stitches were unnecessary.

Dr. LESLIE related an experience in which he used hair pulled out of the mane in order to stitch a wound, to which he had been called and discovered that he had no suture material. The wound did remarkably well, but three weeks later the owner wanted to know why grey scars had marked out the place of each stitch!

Dr. MCGILVRAY was of opinion that the best time to stitch was not immediately after the infliction of the wound, but from 12 to 14 hours later.

The following resolutions were adopted :—

"Whereas the Veterinary Association of Manitoba has learned with regret of the resignation of Dr. Rutherford from the position of Veterinary Director-General and Live Stock Commissioner of Canada, be it resolved that this meeting place on record its appreciation of the great services that Dr. Rutherford has rendered to Canada in the departments over which he has presided, and also to the veterinary profession. Copy of this resolution to be sent to him and also to the Minister of Agriculture."

"Resolved that this Association tender a very hearty vote of thanks to the Mayor and City Council of the City of Brandon for their courtesy in allowing the use of the Council Chamber for this meeting."

In the evening a very enjoyable banquet was held in the Hotel Cecil, Mayor Fleming presiding. A large number of members and friends were present, and enjoyed a very pleasant evening, enlivened by vocal music and speeches.

SOUTH DURHAM AND NORTH YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

A meeting was held in the Imperial Hotel, Darlington, on Friday, March 1st. Mr. W. Awde, Stockton-on-Tees, President, in the chair. There were also present: Messrs. A. C. Forbes, Bishop Auckland; E. H. Pratt, Northallerton; W. N. Dobbing, C. G. Hill, and J. H. Taylor, Darlington.

In presenting the minutes of the last meeting the Secretary stated that in addition to those which had appeared in *The Veterinary Record* there was a minute which for reasons which he now explained he had not included in those published. This minute related to the expulsion of a member from the Association, and he had included it in the minutes now before the members.

It was proposed by Mr. Dobbing, seconded by Mr. Hill, and carried unanimously, that the minutes now presented, after a slight alteration, be taken as read and confirmed.

Mr. Blackburn sent a post-card regretting his inability to be present.

A communication was read from Mr. T. Faithfull-Davies with reference to an International Congress of Comparative Pathology to be held in Paris in October this year.

Several letters were read which the members had received from Members of Parliament with reference to the Coal Mines Bill, the Secretary stated that he had written to Capt. Jessel, M.P., thanking him in the name of the Association for the great service he had rendered the profession when the Bill reached the report stage.

The circular letter from Prof. Gofton was read asking the Association to appoint representatives in accordance with rule 36 of the National Association, to act as their representatives on that Council, and it was proposed by Mr. Hill, seconded by Mr. Forbes, and carried unanimously, that the President and Secretary for the time being each year be appointed by the Association.

CLINICAL CASES.

Azoturia.

Mr. Pratt said that he had at present under treatment a case of azoturia in a hackney mare. She had not been taken out of the stable for a few days previous to the attack, and was taken ill on the road. On returning home she went down in the box and showed the usual symptoms. Her temperature was 101°, and the urine was of a dark coffee colour. The treatment he had adopted was a dose of physic, hot fomentations to loins, injections of adrenalin, oil of turpentine, and ferri perchlor. He had passed the catheter night and morning, and that day the urine was much clearer and the mare was sitting up on her breast: she had not been able to rise yet, but he thought that she very soon would, and intended lifting her in slings if she could not manage alone.

The physic ball did not act, and he had given four injections of adrenalin in all. He did not put her into slings at the commencement of her attack as she seemed so comfortable lying, and he thonght on that account she would be better resting.

Mr. Awde said that he had recently had a case of the same disease in a mare who previous to the attack had not been out of the stable for three days. She was brought to his house, and he ordered her home at once, her stable not being far away, and she soon went down when she got there, and showed acute symptoms. The treatment he had adopted was hot fomentations to loins, sedatives, spirits æther nit., linseed oil, and stimulating liniment to loins, and of course he passed the catheter often. The next day as the mare wanted to be up he assisted her up with slings, and she stood for three hours and was then let down again. She, however, could never stand again; nothing in the way of treatment seemed to do her any good, and she died in a few days. The urine remained a dark colour all the time she was ill.

Tetanus.

Mr. Awde said that he had recently had under treatment a rulley horse suffering from tetanus. Three weeks previous to becoming ill the horse was cut on the quarter with a "ship's plate," and the wound appeared to heal up alright. When first seen the horse was very nervous, jaws almost locked, and symptoms of tetanus well marked. He was put into slings in a dark box and treated with tetanin, one injection being given daily for eight days. The horse gradually improved, and was now having walking exercise and would soon be alright again.

Mr. Awde remarked that he always treated the disease with tetanin serum, and had been more successful with this treatment than any other he had tried. He had records of many successful cases.

Mr. Forbes said that he used to have a lot of very acute cases when he commenced practice at Bishop Auckland, and all died, but the last five cases he had treated had all recovered. He had treated two cases on one farm which were due to foot injuries caused, he thought, by the horses pricking the foot through having to drink from a dirty beck. Both these cases died, and quite recently on the same farm a horse had died from no particular cause, but from what the farmer told him it certainly pointed to another case of tetanus. He did not see this animal, but was told that it had a prick in the foot which was treated by the blacksmith. The horse got sound in a few days and went to work, went a little stiff behind, and died quite suddenly during the night.

It was not long before there was another case on the same farm, and when Mr. Forbes was called in the horse was working. This had similar symptoms to the last case, the farmer said. The serum treatment was adopted in conjunction with extract of belladonna and the case did well. He always advocated slings, a dark box, and belladonna, along with tetanin in these cases.

Nuclein.

Mr. Forbes said that at the last meeting the value of nuclein in the treatment of certain diseases was mentioned, and that recently he had employed it during an outbreak of influenza amongst horses where the temperatures of six of them were 106° to 107°. The temperatures came down rapidly after injecting nuclein. He had found, however, that in many cases the temperature went up again. He recently treated two horses on one farm with nuclein, both animals having pneumonia, but they both died, and on post-mortem gangrene of the lungs was found.

Mr. Awde had tried nuclein with good results, but he was very fond of using glycerol heroin in cases of influenza accompanied with high temperature, and found its use most beneficial.

Mr. Pratt had tried nuclein on a case of mammitis in a mare which got cold in the autumn of last year. The mare was turned out to grass and mammitis developed, but in spite of every care she died.

Mr. Hill had used nuclein in cases of septic poisoning in cows caused by retention of the fœtal membranes. He recently had a very bad case of septic poisoning in a cow which he had treated in the usual way by irrigating the uterus, and carbonate of ammonia and quinine. The case did not submit to this treatment, and looked like going the wrong way, but after injecting nuclein the cow commenced to pick up and eventually made a good recovery. He considered it most useful in canine distemper, after the febrile stage, as it seemed to pick the patients up, so to speak. In the case of the cow he had mentioned he gave her two injections, one the day he saw her and one two days afterwards.

He would like to record a very interesting case of tuberculosis in a dog which had recently been under his notice. The dog had been suffering from diarrhœa for two or three months previous to being seen by him. It took its food well, was very lively, the temperature was normal, but in spite of all the treatment he employed the diarrhœa continued. Suspecting tuberculosis, he injected tuberculin and got a splendid reaction, the temperature going up to 106° at the 12th hour after inoculation. He made a post mortem and found the mesenteric glands, lungs, and spleen all badly affected with tuberculosis.

Mr. Forbes said that the case of septic poisoning in the cow mentioned by Mr. Hill had reminded him of a similar case he treated a short time ago. This was in a heifer which he attended at calving, she having a very big calf, and he had to remove two fore legs before he could deliver. The heifer did well for three days and looked like making a good recovery, but she then took

a turn for the worse, commenced to blow, and looked like dying very soon from septic mischief. He used nuclein and the effect was certainly remarkable, as her temperature dropped, and in two days she was almost well again. He certainly gave nuclein the credit for the heifer's recovery.

SOME AFTER EFFECTS OF PARTURITION.

By C. G. Hill, M.R.C.V.S.

Mr. Chairman and Gentlemen,—After a little persuasion from our President I consented to open this discussion, this appearing to be a fitting subject after the paper which Mr. Blackburn read at one of our meetings a little time ago.

First of all I should like to mention accidental injuries to the vagina after a normal and unaided delivery. How often we country practitioners are called to a cow who is straining so much that one is afraid the uterus will become everted. On examination we find a tear of the mucous membrane of the vagina. We attend to it by antiseptic irrigation, put on a clamp and give strong sedative doses. Some cases will soon yield to treatment, while others continue to strain until they exhaust themselves, and you find the clamp producing sloughing of the lips of the vulva. No medicine seems to have any effect on the straining. I have tried Chlorodyne, Chloral Hydiate, Cannabis Indica, without the slightest effect. On post mortem you find the vagina with a nasty sloughing of the mucous membrane where the injury has been. Never in my experience have I had the same trouble in cases where injuries have taken place in difficult deliveries.

Retention of the Placenta.—The more one sees of these cases the more one is at sea as to whether the after-birth should be removed at once or given a little time. While one animal will retain the after-birth for a considerable time without any bad effects, another in 12 hours will show evidence of septic poisoning. In the case of cows, in my opinion, no placenta should be interfered with under 12 to 24 hours after a natural and normal delivery, as in the uncontracted uterus it is utterly impossible to reach all the cotyledons to separate the placenta.

In the mare and bitch experience teaches us otherwise, and the placentæ should not be allowed to remain longer than 12 hours. Both these animals are very susceptible to septic poisoning from the uterus. Every practitioner has his own particular way of removing the placenta, so I will not go into details as to which is the best way, but I think you all agree with me when I hazard the opinion that weights attached to the after-birth cannot be too strongly condemned.

As to treatment to assist the expulsion of the after-birth, do drugs have any effect? I think it is a fair question, and I am of the opinion that they are useless. Ergot may have some action on the muscular coat of the uterus, but to my mind the only means is removed by manipulation, followed by antiseptic irrigations. The very best antiseptic for this purpose is, I think, Chinosol. You do not get the straining or irritable condition with Chinosol that you get with Hyd. Perchlor, Izal, or any of the tar derivatives.

I have also used pessaries which have been introduced for the last two or three years, but I cannot say they are the success that some veterinary surgeons give to them. I would particularly like the opinion of the members present on their uses, and what the base is of the pessaries they use, whether gelatine or cocoa butter.

In septic conditions of the uterus I think there is nothing better than daily washing out the uterus with a bucketful of Chinosol solution. I have seen this reduce the temperature of cows 2 degrees in 3 or 4 hours. This treatment, with internal administration of stimulants and tonics, I find the best.

In the bitch septic conditions of the uterus is nearly always fatal, and you cannot be too careful in the treatment during parturition. It is surprising, however, what a bitch will go through so long as you keep the uterus in an aseptic condition. There is a condition of the bitch, "endo-metritis," which reminds one of white heifer disease. I have had a good number of cases of this disease. The history you generally get is that the bed in the morning is wet, and there is a slight discharge from the vulva, and as time goes on the hind parts become scalded, and the abdomen distended, as though she is in whelp. No systemic disturbance is noticed until the uterus gets very dilated. The only treatment in these cases is surgical. It is no good trying to empty the uterus by the os, for if you succeed, which is most unlikely, the uterus will only fill up again. I have never hesitated, once I have made the diagnosis, but removed the uterus and the ovaries. In removing the uterus great care has to be taken, as the coats are very thin and easily ruptured, and you will flood the abdomen.

In mentioning this condition it is not exactly correct to call it one of the after effects of parturition, for I have seen it in a maiden bitch.

Post partum Hæmorrhage.—This is a most alarming condition, and it has been my experience to be present at about six cases. The first case I saw was in a mare in my pupil days. The mare had been delivered by my preceptor of a live foal, and immediately the blood poured out of her just like out of a bucket and she died in less than five minutes.

My second was in a cow, but fortunately there was a bucketful of cold water and a roller towel standing in the cow byre. I immediately plunged the towel in the water and introduced it into the uterus and began swabbing the walls of the uterus, and it contracted and the hæmorrhage became arrested. The cow was very weak, but ultimately made a good recovery.

About two years ago I was called to a mare to remove the placenta. On introducing my hand I found the uterus full of clotted blood. I began to remove the clots when all at once the mare commenced to bleed, so I immediately had recourse to the towel and cold water, and the uterus began to contract, and I could feel it closing on my hand, and while this was going on the placenta dropped out. This mare made a good recovery. In these cases I think that is all you have time to do, as no hæmostatics have time to act.

There are many more conditions one could profitably enter into but time, I am afraid, will not permit. Any one of these already mentioned might have afforded a good paper, which would perhaps have been better than passing them over in an imperfect manner as I have done.

Before closing I should like to call your attention to a paper which has appeared recently in *The Veterinary Record* on the retention of the placenta, and the discussion thereon. It is a very good paper, dealing in a very practical manner with the subject. What appeals to me is the various opinions on the etiology of the subject. It is my privilege to attend the cattle market here, where every week some twenty to fifty cows give birth under, what I might say, most unnatural conditions. After taking long railway journeys, some give birth in open cattle trucks in their journey to the mart, they are knocked about, take pot luck in every way, whilst in the majority of cases they come from farms where everything is quiet, to a noisy, hustling condition, which is quite foreign to them. Under these conditions you would naturally expect you would get a number with retained placentæ. This is not the case, for I get very few indeed. They never hurry a cow when calving, but give her plenty of time, in fact, nearly all calve without any assistance, and to my mind this answers the cause of a lot of these cases. If the cow were given more time during the act of parturition I think these

retentions would not be so numerous, except in cases of abortion and premature birth.

For these few disjointed remarks I ask your indulgences, and hope they will cause some profitable discussion on a matter which to all of us in our daily practice is one of ceaseless worry and anxiety. I thank you, gentlemen, for your patient hearing.

DISCUSSION.

Mr. PRATT thanked Mr. Hill for his very practical paper. He agreed with Mr. Hill with reference to the removal of the fœtal membranes in cows and mares, and never allowed the membranes to remain longer than 12 hours in a mare. Of course, if he attended a mare during parturition he always removed the membranes after delivering the foal. He certainly liked pessaries in retention of the after birth, and made his own by putting half-an-ounce of salol in a gelatine capsule, and after mixing salol in vaseline and smearing it on his hands and arms found this an excellent practice when removing fœtal membranes. He always used pessaries in conjunction with irrigation of the uterus and found this method of treatment the best. He remembered a case of post partum hæmorrhage in a heifer due to a slit in the vagina, where he packed the passage well and put on a clamp. On removing the clamp and packing in two days he found the artery bleeding, so took it up with the artery forceps and allowed them to remain there for four days, when they were removed, and there was no more trouble, and the patient did well.

He had had a few cases of dropsy of the uterus, but these cases usually did not do much good. About a couple of weeks ago he had rather an interesting post mortem on a sow which had been reported as a suspected case of swine fever. The uterus was full of yellow fluid and there would be quite two gallons of it, and in it were three pigs in a good state of preservation. The sow had a litter of pigs last September, and these pigs had been in the uterus since.

Mr. FORBES wished to thank Mr. Hill for his paper, which at this time of the year was of great importance. He agreed with the previous speaker that the sooner the membranes were removed after parturition in the mare the better. He liked pessaries best and had almost given up irrigation of the uterus. He did not think any medicines had any effect in removing the fœtal membranes, but at the same time thought that until they came away, or were removed, it was advisable to keep the bowels acting well in the cow by giving aperients. He agreed that in these cases of violent straining in cows sedatives seemed to be useless. This was well illustrated by a case of eversion of the uterus in a cow which he had some time ago. It was a most difficult case to return the uterus, and took him fully one-and-a-half hours to get the uterus back in position, as it was so hard and swollen, and the cow strained so much. He got it back once, and on removing his hand out it came again, but eventually he was successful after lifting the cow by her hind legs with blocks. After putting on a clamp he raised the cow a good two feet behind. Her pains were most violent, and two ounce doses of Chloral hydrate were given at intervals during the night, but the drug was absolutely useless, the cow straining continually, and the uterus could be seen to be in the vagina and ready to be again everted if the clamp was removed. He gave the case up as hopeless after seeing her the next day, and was surprised to hear in a week or so that the cow was still living. He again went to see her and found her standing in the byre eating hay, and was informed that the straining, although present at times, was not so bad as it had been. As there now appeared some chance of her recovery he had her removed to a box, took off the clamp and out came the uterus. It had, however, now contracted to the size of a football, but was most offensive. As it was out of the question to attempt to return the organ, amputation was adopted, and this was effected by means of the écraseur, after injecting eucaine. No ligature was put on, and there were no after effects, the cow eventually doing well, and was sold as fat to the butcher.

Mr. DOBBING thanked the essayist for his interesting and practical paper. He agreed with the previous speakers as to the advisability of removing the placenta in the mare as soon as possible after parturition. In the case of the cow, however, he thought that they were better left, providing the animal was well otherwise, as one could not well remove all the attachments if the membranes were removed too early. He certainly liked the use of pessaries, and had found them most useful, and used them in conjunction with irrigations of the uterus. He once had a case of eversion of the uterus in a mare. The uterus was well washed with antiseptic solution before it was returned and a clamp applied to the vulva. It looked a bad case, and the prognosis was very unfavourable, but word came the next morning that the mare was living, and she eventually made a good recovery.

The SECRETARY had nothing to add to what the previous speakers had said, but had much pleasure in adding his thanks to Mr. Hill for kindly coming forward and giving them such an instructive and practical paper.

Mr. AWDE had come across cases in cows when the straining was most violent, and often no remedies seemed to be effectual in stopping the violent straining. He did not think that any medicinal agents were much good in assisting the expulsion of the fœtal membranes. He had tried most of those which were recommended for that purpose, but with no satisfactory results.

He certainly liked irrigating the uterus in these cases, and found solution of chinosol the best agent to employ. Generally in cases of post-partum hæmorrhage you were not there in time to save your patient. He remembered a case of a heifer where there was a bad tear in the vagina, and he found that with dressing with chinosol the case made a good recovery.

He had very much pleasure in proposing a hearty vote of thanks to Mr. Hill for his paper which had been full of interest, this was seconded by Mr. Pratt, and carried unanimously.

Mr. HILL suitably replied. The members afterwards had tea together.

J. H. TAYLOR, Hon. Sec.

Contagious or Non-contagious Abortion: Claim for Damages.

On Monday at the conclusion of the criminal business of the Kilkenny Assizes, the Lord Chief Baron took up the hearing of a record case in which Mr. J. Cooper Chadwick, Fanningstown, in the south end of that county, sought to recover damages from Mr. Richard Gorman, Curraghmore, Kilkenny.

Mr. Chaytor in opening the case, said the action was brought to recover £500 damages for injury to plaintiff's cattle, caused, as they said by the excessive driving of those cattle by defendant. The plaintiff in the action, Mr. Cooper Chadwick, was a Tipperary man, who a few years ago bought a property in County Kilkenny. In 1909 he bought a house and farm at a place called Fanningstown, and started there a business of his own in connection with the feeding and selling of cattle. What he used to do was to buy young heifers in the spring, get them put in calf, and sell them at the end of the year. In the spring of 1910 he wanted to increase his business, and he took the grazing, an eleven month's agistment letting, of lands belonging to a Mr. Hearne, which comprised about fifty odd acres, and for which he

paid a rent of £60 a year. His idea in taking this land was that he would stock it with a lot of young heifers. He would then bring a bull in on the lands, get the heifers put in calf, and sell them at the end of the year. In the month of April 1910, he put on those lands which he had taken from Mr. Hearne some 52 young heifers. The heifers were then in perfect health and condition. That was at the end of April or the beginning of May 1910. Adjoining those lands which he had taken from Mr. Hearne was the farm of Mr. Gorman the defendant. The two sets of lands were separated the one from the other by one of those raised sod fences, with a barbed wire fence on top of it. There was only one stretch of wire fence on top of the sod fence that separated the two sets of lands. Where lands were close to each other like that there was always, naturally, a little trespass, and in the month of May there was a littie trespass on both sides. Some of Mr. Cooper Chadwick's heifers got on to Mr. Gorman's land, and Mr. Gorman's bull got on to the plaintiff's land, and they made a complaint about it.

It was on the 5th of September that the circumstances arose that gave rise to the action which they had to try now. On that night 39 of the 52 heifers got into Mr. Gorman's land by means of a gap in the fence that separated the two farms. He did not know anything about Mr. Gorman, but on this particnlar morning he was very angry that these 39 heifers had got on his lands again. What the defendant did was about as wanton and illegal an act as was ever done between one man and another. He got his little boy of twelve or fourteen years of age, and two sheep dogs, and told this little boy to take the 39 young in-calf heifers and drive them along the public road to Mr. Cooper Chadwick's house, a distance of about 3½ miles away. He need not describe to them at any length the condition of these cattle when they got to Mr. Cooper Chadwick's house. They were blowing and perspiring, and some of them lay on the ground. They were in a shocking condition, distressed beyond measure, and one of them had one of her teats actually bitten off, evidently by a dog. Having seen the cattle, Mr. Chadwick immediately sat down and wrote a letter to defendant, which he gave to the boy to bring to his father. The next morning plaintiff went to his solicitor, who wrote defendant a letter pointing out exactly what had occurred, and complaining bitterly of it. In consequence of the ill-treatment to the heifers 11 out of the 39 heifers slung their calves. Not only that but it would be proved that the remainder of the 39 that were driven were in a miserable and poor condition and that they were worth nothing to plaintiff, considering that it had got abroad that some of them had slung their calves and the others had been seriously injured.

The plaintiff, sworn, corroborated his counsel's statement. One of the teats of one of the heifers was completely cut off, as if bitten. Eleven heifers slung their calves; eight were born alive, but all of them were born prematurely. He never had a heifer that slung her calf at Fanningstown, and he knew nothing about contagious abortion. In January last he commenced giving special feeding to these cattle to keep them in some sort of good condition, and though he had expended a considerable sum of money in that way he did not think he could sell the beasts presently. He estimated his entire loss at £500. His loss was made up as follows—by depreciation of cattle in value and in extra feeding. In reply to Mr. Carrigan, K.C., he stated that by the terms of the letting agreement in connection with the 50 acres Mr. John Hearne was not to be responsible for any trespass or sickness or death, but he was to pay a man to count the cattle on the place daily and report if any were missing. That was the extent of Mr. Hearne's responsibility under the agreement. The first stock he put on those lands consisted of 26 bullocks, and these were put on those lands on the 19th April, 1910. He then gave evidence as to purchases of two and a half year old heifers, the total number being 63 and most of those, he believed, were sent to the land at Curraghmore.

Mr. Carrigan—You purchased those heifers at an average price of £8 10s apiece or less. Would you describe them now as they have been described yesterday? Wouldn't you consider them to be second-class heifers at best?

Plaintiff said of course the cattle were not of the very best quality, but he considered they were good value for the price he paid for them. In the letter which he wrote to defendant on the morning that the cattle were driven to his house he mentioned that there was only one dog with the boy, but when he was after giving the letter to the boy he saw the two dogs. He admitted that his cattle trespassed on Gorman's land and that he sent up his man to repair the fence. On the 1st Jan. last, for the purpose of seeing how he stood for the year, he valued the 55 in-calf heifers at £10 each.

Re-examined by Mr. Chaytor—I gave the other side all the information required without any order from the court; I kept nothing from them. I never had any difficulty in identifying the 39 cattle that were driven from the rest. I sold two calves of the 39 heifers and only got 25s. each for them. The average price for good calves on the occasion on which I sold these two was about from 45s. to 50s. each. The two calves that I sold were not developed.

Dennis Keefe stated that he was in the employ of plaintiff as herd and steward. Witness visited the lands of Curraghmore and made an inspection of the fence. He saw where the bank had slipped away, and he saw the marks of the cattle in the gap. The wire on the top of the gap was bent up somewhat, and it was under it that the cattle got into Mr. Gorman's land. If the cattle had not been driven as described and that they could be sold in the ordinary way, he believed they would fetch on an average £12 10s. apiece.

By Mr. Carrigan—I ascribe all this misfortune to the fact that these cattle were driven on that morning by a boy and two dogs. If I were driving those cattle myself I would have divided them into three lots, because it would be necessary to do so on a narrow road like that.

Mr. A. Dobbyn, V.S., Waterford, in reply to Mr. de Renzy, stated that on the 8th September he went to Fanningstown and was shown 39 heifers. They seemed dejected, tired, and out of sorts. Four of them were lame. The whole of them seemed to have a slight springing of the udder. Hardship or driving would have caused or produced the symptoms he observed. He had been attending the cattle since. Some of the cattle—thirteen—were more injured than the others, and those thirteen were kept separate from the rest of the 39. He noticed on his first inspection of the cattle that one of the teats of one of the heifers was completely cut off. It was a clean cut, and did not present the appearance of having been caused by barbed wire. The bite of a dog would have cut off the teat in the manner described. Witness then proceeded to give evidence as to his examination of the heifers and the calves which they had slung. To the driving, which caused the cattle to be in the condition described on the 5th September, witness attributed the premature births and abortions. Since witness saw the heifers on the 8th September there had been no improvement made in their condition, and the driving, as he had heard it described, would have been sufficient in itself to prevent them improving in condition. They were still in a miserable condition, and if they were sent to a fair at the present time he did not think it would be possible to sell them; it would, at all events, be very hard to get a purchaser for them.

Cross-examined by Mr. Swayne, B.L., witness said that it would strike him that the number of cattle grazing on the lands of Curraghmore was rather large, con-

sidering the acreage and the dryness of the weather; he would not expect them to thrive very much on it. His theory was that it was the exertion which the cattle went through that brought about the abortions. The time that would elapse between the time of an injury and abortion would all depend upon the character of the injury. In the case of a blow he would expect abortion to take place soon afterwards. The facts of the case would not be consistent with contagious abortion. Usually when abortion was brought about by violence marks were apparent on the fœtus, but there were no marks on the fœtus in this case. He recommended no treatment for the 39 cattle when he saw them on the 8th September. He did not know how they would get on at the time, and he suggested that they should be kept separate from the other cattle. It would be an unusual thing for a sheep dog in the habit of being kept about cattle to bite their teats. He did not at any time entertain the idea of contagious abortion in regard to those heifers.

Re-examined by Mr. de Renzy: The length of time a cow would continue to carry her calf after she being injured would depend upon the nature of the injury, the animal's constitution, and other circumstances. One of the symptoms of contagious abortion was the ease with which the calf would be expelled, and difficulty in that respect, as had been stated to have accompanied the birth of those calves, would be inconsistent with contagious abortion. He had not seen any symptoms of contagious abortion on this examination of the heifers. There was no truth in the suggestion that he had at any time suspected the presence of contagious abortion amongst the cattle.

Mr. John F. Healy, V.S., an inspector under the Board of Agriculture, gave evidence to the effect that on the 11th February he was called into consultation with Mr. Dobbyn in connection with these cattle. Thirteen of the cattle which he saw on that occasion on plaintiff's farm moved very stiffly and were worth only about £4 or £5 apiece. The other 26 cattle he was shown were in fair condition, but of course if he were selling them he would hesitate about giving any guarantee as to the time they would calve, etc. Assuming that such a warranty could not be given, the value of the 26 heifers on the day he saw them would be £8 or £9 apiece. If any of the cattle were infected with contagious abortion the disease would have spread through the whole herd.

By Mr. Carrigan: The drive was sufficient to cause the stiffness which he noticed on the cattle. When he went there 26 were in one field, 11 in another, and two in the stall. If the 26 heifers could be sold with a warranty their value would be about £13 or £14 apiece. He would not call them first-class cattle. The warranty that was usually given at the sale of an in-calf heifer was that she would calve within a certain period. He was not told that the other cattle served by the same bull as these cattle were served by had aborted.

Sir John M'Fadyean, London, Chairman of the Departmental Committee appointed by the Board of Agriculture to inquire into matters in relation to abortion in cattle, was the next witness. He said that he received a sample for examination of the after-birth of a heifer belonging to Mr. Cooper Chadwick. He did not examine that sample because he thought it was not in a condition to be examined. His reply in regard to that sample to Mr. Dobbyn, V.S., was that if he would take the trouble to send him a sample of blood from the heifer he could give his judgment as to whether it was a case of contagious abortion or not. On the 7th March he received a sample of blood. He examined the blood and subjected it to a test—a very reliable test. The result of the test was that he was able to say that the animal to which the sample of blood belonged was not affected with contagious abortion. He subsequently wrote to Mr. Dobbyn asking him to send him samples from three other cows that had aborted or calved prematurely, and last week he received three samples. He subjected these samples to the same test as the other sample had undergone, and in each case the test indicated that the cow in question was not affected with contagious abortion. His opinion was positive with regard to these four cases that they were not affected with contagious abortion, and though it might be probable that the other cattle were not affected with it he could not swear that they were not. It was quite impossible to predict, if contagious abortion were introduced into a herd of cattle, how many in the herd would abort. It was a fact well known to everybody that, as a rule, the fœtus in cases of abortion came away without practically any assistance. Even considering that 39 heifers were driven and that only 11 aborted, the facts, as stated in the case, strongly suggested that the driving had to do with the abortion. He was quite positive that it was not contagious abortion. One had to find an explanation, and having listened to the evidence given in court and having regard to the special questions, he could see no other explanation of the abortion than overdriving.

Replying to Mr. Ringwood (a juror), who asked why it was that the abortions extended over some months and did not occur very soon after the alleged overdriving, the witness said there was a little difficulty in explaining that, but the explanation which suggested itself to him was that the abortion was not the immediate or direct consequence of overdriving but the indirect consequence of it.

Mr. Gorey (foreman): In other words, you could not trace the abortion that took place to the driving of the cattle?

Witness: It was the indirect cause.

Mr. Gorey asked the witness how he accounted for the abortion taking place in December and January, and in some cases in February and March, when this overdriving was alleged to have taken place on September 5th.

Witness: I feel bound to accept the evidence I have heard in this court, that as a consequence of this overdriving the general health of these cattle have been most severely injured.

Mr. Gorey, on behalf of the jury, said they were satisfied to accept the evidence that there was not contagious abortion.

Prof. Mettam, Principal of the Royal Veterinary College, Dublin, gave evidence as to having examined an after-birth of a cow belonging to plaintiff that calved on the 25th February. He made a very careful examination and the result was absolutely negative. He found no trace whatever of contagious abortion. That these abortions extended over a rather long period might, he thought, be accounted for by the fact that the cattle, as in health, lost their tone, and were reduced to a state of general debility.

Patrick O'Brien gave evidence as to having sold a bull to Mr. Cooper Chadwick. The bull had served some of witness's cows and they calved all right.

Defence.

Mr. Carrigan, K.C., in an able speech having stated the case for the defence.

The defendant, Mr. Gorman, was then examined by Mr. Swayne. He stated he lived at Curraghmore, where he held 175 acres of land. The fence which divided his land from that held by the plaintiff was a sod fence with barbed wire railing on top. There was a big dyke on his side of the fence nearly the whole way through except for a distance of about 100 yards. In parts the fence at plaintiff's side was only 2 feet high, and in other parts it was 6 or 7 feet high. In the months of April and May plaintiff's cattle trespassed on his lands, and after that the fence was repaired by putting up new stakes, with barbed wire. On the 4th September

he was at the fair of Clonmel and did not return until about 10 or 11 o'clock that night. The fields of his joining the land held by plaintiff, and which consisted of about 11 acres, were under aftergrass. He did not see the cattle on the morning of the 5th September. When he came home on the previous night he was informed by his son that there were 47 or 48 cattle on the aftergrass and that owing to the gates being locked the cattle could not be put in on Mr. Chadwick's land and that he left them on the road. His son told him the following morning that the cattle were in on his land again. That was about 6 o'clock a.m., and he told his son to drive them home to Mr. Chadwick or they would kill themselves going over the fence when he could not open the gate to let them in. He (defendant) had only one sheep dog, which was about ten years old and which was used to cattle from being about them every day. He never saw the dog catch a beast in his life; in fact, that was the only objection he had to him. Apart from waste and the portion he was keeping for meadowing, Mr. Chadwick had about 30 acres of pasture at this place, and considering the dryness of the year and the scarcity of grass he would not think there was grass enough for the stock Mr. Chadwick had on the land. To his knowledge the cattle were breaking out on other lands around the place. He saw the two gaps through which the cattle got into his land. The bank was broken down, one of the posts was broken, and the wire was pulled into his (defendant's) field. The gripe at his side of the fence would be about 6 feet wide. He also found marks on the fence dividing plaintiff's land from the road, showing that the cattle effected an entrance from the road on the night of the 4th September. Chadwick's cattle were a thin, poor class of cattle, and appeared to be of a very inferior class. They showed signs of want of proper feeding. He saw at Fanningstown six calves which were represented to him as being calves of some of the cattle that were driven; three of them were very fair, one was very good, and another was very small. He never saw half as much stock on the land at Curraghmore as Mr. Chadwick had on it during that year.

Mr. Chaytor: Isn't it rather strange that these very poor, thin cows should produce these very good calves?

Defendant: No, it is not strange.

Did you say at the quarter sessions in Piltown when a case of trespass was being heard that these heifers were in very good condition?—No.

Isn't it a strange thing that when you got those letters from Mr. Chadwick and his solicitors you never took the trouble to go look at these cattle until the present month?—I had nothing to see on them. My son told me that one of them had one of her teats cut, and that a white heifer was blowing.

Continuing, the defendant said the letter his son brought him from Mr. Chadwick and the letter he received from the plaintiff's solicitors told him about the other cattle. He did not believe what Mr. Chadwick said in his letter.

Asked by Mr. Chaytor why he did not send his workman, John Butler, to look after the cattle that morning with his son, defendant said Butler was not at work at the time his son went to see after the cattle. Even if Butler were at work and that he sent him to look after the cattle, he would not have anyone to milk his own cows. He did not swear at Piltown that he sent Butler with the cattle. He never saw the man Kenny on the land. He did not know that Kenny was supposed to be looking after Mr. Chadwick's cattle. He often saw Kenny crossing Curraghmore across his (defendant's) own land. Kenny had charge of a farm further on than Curraghmore. He never saw anyone looking after the cattle there but Keeffe.

Richard Gorman, son of defendant, gave evidence of driving home the cattle on the morning in question. When he arrived at Mr. Chadwick's one of the men employed by the latter pointed out to witness one heifer that had one of her teats cut off. He hadn't noticed the heifer bleeding until then. He had only one dog with him, and he was an old, quiet dog. He did not see the dog snap at any of the cattle. He did not use any violence towards the cattle, or drive them fast or beyond the ordinary pace. The dog made no attack on the cattle, and he drove the cattle with ordinary care.

By Mr. de Renzy: He didn't know the heifers were in calf at the time. When he came down to his father the cattle were on the road, and they remained there while he was taking his breakfast. The white heifer was bleeding because she was in better condition than the others. None of the cattle lay down at Chadwick's while witness was there.

Patrick Byrne said he saw young Gorman driving the cattle the same as anyone would drive them. The cattle were going along quietly. Young Gorman had only one dog; the dog was not worrying the cattle in any way.

Mr. James Craig, Professor in the Royal Veterinary College of Ireland, Dublin, in reply to Mr. Swayne, said that presuming that there was violence used and if the abortion was directly attributable to that violence, it would take place a short time after the violence had been inflicted. If overdriving was the direct cause of this abortion, then it should have occurred within a short time after the over-driving.

Mr. Chaytor: Supposing, now, that the abortion was not directly caused by the overdriving, but that the overdriving caused the condition and constitution of the heifers to be lowered, would that account for the abortion extending over several months?—In my opinion, it would not. The effect of the overdriving would only be temporary.

Mr. Michael Quirke, of a firm of Carrick auctioneers, who was summoned by subpœna, gave evidence as to having carried out an auction of cattle for plaintiff at Carrick fair on the 28th December. He sold three cattle for £12, £11 10s. and £11 eacn, and as there was a reserve price of £11 each put on the other sixteen by Mr. Chadwick they were not sold. He got bids up to £10 for some of them but no more. He got no bid for some of them—perhaps two out of the five that he put up for sale, besides the three that were sold.

In reply to his lordship witness said that although Mr. Chadwick said they should get abovt £11 each for the sixteen cattle, witness knew that they were not worth that figure. He would consider that they would be dear at ten guineas each.

Mr. Gorey (foreman) said that before the case proceeded any further some of the jury desired him to say that it was their wish that the counsel on both sides would come together with a view to arriving at some agreement. That was not the unanimous wish of the jury, but of a section of it.

His Lordship said he was sure connsel on both sides would consider the suggestion. He would rise for a quarter of an hour to give counsel an opportunity of coming togethor. He hoped they would succeed in effecting a satisfactory settlement, but his hopes were not always realised.

Counsel on both sides then left the court, and after an absence of some minutes returned, when Mr. Chaytor announced that it was impossible to arrive at a settlement. They had done their best, and he was sorry that they could not effect a settlement.

John Walsh, farmer, Castletown, stated that on the 24th March and 12th April, 1911, he sent a heifer to be served by Patrick Brien's bull. The heifer slung calf on the 15th November, to the best of his opinion. The heifer had slung calf in December, 1910, she having been served in that year by a bull belonging to a man named Dywer. Witness was at Carrick on the 28th December when Mr. Chadwick's cattle were put up for

sale. He heard a bid of £12 being made for one of them, and £10 10s. for another. He did not think the latter bid was accepted.

Mr. T. A. Mulcahy, V.S., Clonmel. stated that on the 15th January he visited Mr. Chadwick's place at Fanningstown. He saw there three heifers which he was told had slung calf in a house; he also saw two heifers with calves, both alive, a heifer that calved on the 3rd January, and another that had calved on the morning that witness arrived. He was pointed three heifers that had aborted. The cattle were of a bad class, West Cork cattle. They were small, inferior cattle. He was pointed out thirty-five other cattle, alleged to have been driven. They were all inferior cattle. He saw the land at Curraghmore, and he considered that the pasture there was not sufficient to keep fifty-eight cattle during last summer. There were about ten acres of it fairly good, but the rest of it was bad. His opinion was that only three of the heifers aborted, and that these were suffering from contagious abortion.

Continuing, the witness said that if the cattle had aborted the day after the drive then there would be grounds for supposing that the drive had something to do with it. In his opinion, and considering the space of time between the day they were driven and the 11th October, when the first one slung calf, it was ridiculous to connect it with the driving. He said that three had only aborted, and the calves that he saw on the grounds were, in his judgment full-time calves. He did not admit to the plaintiff that the calves were premature calves, and Mr. Chadwick would be making a mistake if he said that witness made such an admission. The after-birth that Professor Mettam tested was that of a healthy cow that had calved up to her time. Asked if he could reconcile his statement that the calves he saw were full-time calves and the period during which the bull ran amongst the herd, witness said that plaintiff had no knowledge that the heifers, or some of them, had not been bulled at the time he bought them. A decent in-calf heifer would cost £17 or £18

Mr. Gorey asked the witness which, in his opinion, the leaping over the fences on the night of the 4th September or the driving as described would be most likely conducive to abortion?

Witness: The leaping over the fence of course, but they would sling that night or next day.

Mr. Gorey asked if two or three cows in a herd aborted without any of the circumstances stated being present at all, would that be a due or undue proportion to abort?

Witness. It would be but usual. An odd heifer slings in every herd.

This closed the evidence, and Mr. Swayne and Mr. de Renzy then addressed the jury at considerable length.

His Lordship then reviewed the evidence and said the only direction in law that he had to give the jury with reference to the entire case was, that the onus of proving to their satisfaction that the injury to the cattle was caused by the driving home, to the plaintiff. The questions his Lordship submitted to the jury were:—Were the manner in which and the speed at which plaintiff's cattle were driven from Curraghmore to Fanningstown by defendant's son reasonable? (2) If not, did such unreasonable driving injure plaintiff's cattle or any of them? The third question left to the jury was that of assessing the plaintiff's damages. His Lordship said that if they were of opinion that the cattle were driven in a reasonable way they would find a verdict for defendant, because the real cause of the action was driving them in an unreasonable way.

In reply to a question asked by Mr. Bloomfield, his Lordship explained that the defendant was not responsible for anything that took place on the night of the 4th September. The boy was entitled to turn the cattle out of his father's aftergrass on to the road, and nothing had been proved to show that he used undue force, or anything of that sort. All the jury had to consider was the drive of the 5th September.

The jury then retired, and after an absence of close on an hour and a half, returned, when the foreman announced that there was no possibility of an agreement.

The jury was then discharged

DISEASES OF ANIMALS ACTS 1894 TO 1911, SUMMARY OF RETURNS.

Period.	Anthrax.		Foot-and-Mouth Disease.		Glanders.		Parasitic Mange.	Sheep Scab.	Swine Fever.	
	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.			Out-breaks	Slaughtered. *
IRELAND. Week ended Mar. 16	...	...	...	...	...	...	1	14	5	41
Corresponding Week in 1911 ...	...	...	...	...	1	1	2	5	1	3
Corresponding Week in 1910 ...	...	...	...	...	...	...	2	17	3	27
Corresponding Week in 1909 ...	...	...	...	...	...	...	2	5	...	12
Total for 11 weeks, 1912 ...	1	1	...	...	...	...	25	195	35	186
Corresponding period in 1911 ...	3	3	...	...	1	1	27	183	31	586
Corresponding period in 1910 ...	4	6	...	...	...	...	22	220	10	255
Corresponding period in 1909 ...	1	1	...	...	...	...	27	189	8	71

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Mar. 19, 1912

NOTE.—The figures for the Current Year are approximate only.

* As Diseased or Exposed to Infection

DISEASES OF ANIMALS ACTS 1894 TO 1911, SUMMARY OF RETURNS.

Period.		Anthrax. Outbreaks Confirm'd	Anthrax. Outbreaks Reported	Anthrax. Animals Confirm'd	Anthrax. Animals Reported	Foot-and-Mouth Disease. Outbreaks	Foot-and-Mouth Disease. Animals.	Glanders * (including Farcy) Outbreaks	Glanders * (including Farcy) Animals.	Parasitic Mange. Outbreaks	Parasitic Mange. Animals.	Sheep Scab. Outbreaks	Swine Fever. Outbreaks.	Swine Fever. Slaughtered. *
GT. BRITAIN. Week ended Mar. 23		23		24				6	12	72	170	6	67	694
Corresponding week in	1911	14		17				2	3			5	61	630
	1910		28		29			12	23			9	24	261
	1909		21		25			17	89			15	23	354
Total for 12 weeks, 1912		303		333				42	94	1468	3448	139	724	8850
Corresponding period in	1911	244		281		1	18	48	179			275	462	5213
	1910		368		440			87	242			273	281	2094
	1909		333		478			131	446			356	333	2877

* Counties affected, animals attacked: Essex 2, London 8, Middlesex 1, Warwick 1.

Board of Agriculture and Fisheries, Mar. 26, 1912.

		Outbreaks									
IRELAND. Week ended Mar. 23		...	...	...	...	...	...	2	6	9	40
Corresponding Week in	1911 ...	...	...	...	...	...	...	2	14	1	71
	1910 ...	...	...	...	...	...	...	...	13	1	42
	1909 ...	...	...	...	...	...	...	1	8	..	...
Total for 12 weeks, 1912	...	1	1	...	...	...	...	27	201	44	326
Corresponding period in	1911 ...	3	3	...	...	1	1	29	197	32	657
	1910 ...	4	6	...	...	...	...	22	243	11	297
	1909 ...	1	1	...	...	...	...	28	197	8	71

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Mar. 25, 1912

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

Vivisection and the Veterinary Profession.

To the Editor of "The Referee."

Sir,—Are those people who rage against vivisection aware of the terrible cruelty that is going on in this country every day? I allude to the operations performed on animals by unqualified men whose only qualification is, in many cases, that they are cheaper than the properly qualified man who has spent about six hundred pounds and four or five years of study to acquire his knowledge. The unqualified men are generally ignorant of the first rudiments of anatomy, yet they cut and hack animals and the law allows it. If a man loses his temper and beats a horse unmercifully, or a coster works his lame donkey, he is punished, but one of these unqualified men may castrate an aged stallion, unnerve a horse, perform tracheotomy, or cut down to the bone the shoulders of an animal without using an anæsthetic, and the law allows it.

Surely no man who is not properly qualified should be allowed to use a knife in major operations, and certain of the operations which cause great pain and which could easily be scheduled by experts should not be allowed to be done, save under an anæsthetic, by anyone. The extra cost would be a few shillings more.

And then the use of drugs by unqualified men is too absurd for words. They mix drugs together and administer them to the wretched animals under their charge. But they are absolutely ignorant as to the effect the drugs have on the animal. They pour into the stomach of the beast, of which they know nothing, noxious mixtures, of which they know less.

The Royal College of Veterinary Surgeons does not allow a man to style himself a veterinary surgeon unless he is qualified, but the individual may call himself a horse doctor. Yet in the place he practises in he is known only by the name of "Vet."

The R.C.V.S. does not allow a qualified man to employ an unqualified assistant, but this law is hardly ever enforced, as dozens of qualified "vets." do not send their sons to college now because, they argue, it is useless to spend five or six hundred pounds on the education of a lad when he can practise for nothing, and when a blacksmith or groom, or anyone else, in fact, can carry out all the duties of a qualified man, and the law does not interfere.

This is proved, for at the present time there are only 180 students at the Veterinary College in Camden Town. A few years ago there were three or four hundred, and yet there are as many men acting as veterinary surgeons as ever there were. The funds of the College are in a very low state, the place out of repair, and lacking many things that are absolutely necessary. Unless something is done quickly we shall soon have no qualified men, and shall drift back to the animal doctor of a hundred years ago.

If the public realised what was going on in this necessary profession it would force legislation to alter this abominable state of affairs, for there is far more brutality perpetrated on dumb animals every day in England by men acting as veterinary surgeons, sanctioned by the law, than could occur with vivisection in a hundred years. I have no axe to grind with regard to the veterinary profession, as I am a tradesman, but I have stated facts which cannot be contradicted and which are a blot on England's humanity.—I am, sir, yours, etc.

PATE, J.P.

County of London Magistrates' Club.

AN ECRASEUR FOR OVARIOTOMY OF THE MARE OR COW.

So far as I am aware, there has not yet been brought before the notice of the veterinary profession, an écraseur which is equally suitable for spaying mares or cows, and this one here illustrated, is the result of several models, which have been made at my request, by Messrs. Arnold and Sons, of Giltspur Street, E.C.

I have thoroughly tested the Instrument on a large number of dairy cows, and over fifty vicious mares, and claim for it the advantage that, with the handle in the position here depicted, there is much greater facility for working conveniently: and that in the cases in which one meets with an unusually tough pedicle (a very common occurrence in a vicious mare) there is no difficulty whatever in removing the ovary, even with the most blunt-edged chain.

FREDERICK HOBDAY, F.R.C.V.S.

Kensington.

Mendelian Experiments with Thoroughbred Horses.—Details of a New Scheme.

We are in a position to state that, thanks to a generous gift to the Board of Agriculture and Fisheries by Capt. Dealtry C. Part, of the 21st Lancers, for the purpose of carrying out experiments on Mendelian lines, it has been possible to inaugurate one of the most important experiments ever undertaken in the history of horse breeding.

Since the discovery in 1900 of the Abbot Mendel's long-lost memoir on heredity a large number of experiments on Mendelian lines have been carried out with the smaller domesticated animal and in other directions with most successful results. So far, however, owing largely to lack of resources, no serious attempt has been made to experiment with horses on an adequate scale. Capt. Part's gift comes therefore at a most opportune moment, and, in view of the intrinsic value and paramount usefulness of the British thoroughbred as a foundation stock all over the world, it is particularly fitting that scientific experiments should be begun with this ancient and highly-specialized breed.

With the concurrence of the Board of Agriculture the scientific direction of the experiments has been entrusted by Capt. Part to Maj. C. C. Hurst, F.L.S., Director of the Burbage Experiment Station and a member of the Advisory Council on Horse Breeding. As one of the leading authorities on Mendelism, and the first to apply the Mendelian principles of heredity to the thoroughbred horse, Major Hurst is naturally fitted for the scientific direction of Capt. Part's experiments. Mr. F. W. Carter, Superintending Inspector of the Board of Agriculture, who is largely responsible for the Board's light horse-breeding scheme, has been detailed by the Board to watch and assist the experiments on their behalf, and, in conjunction with Capt. Part, has completed arrangements in time for the present breeding season.

OBJECTS.

Notwithstanding the remarkable differences of opinion existing in regard to horse-breeding in general, most people seem to be agreed on two points—first, that the best type of light horse for purposes of general utility is the weight-carrying hunter; second, that the best foundation stock for crossing purposes is the thoroughbred. The practical object of Capt. Part's experiments, therefore, is to utilize the recently-discovered Mendelian principles of heredity in order to make, if possible, a true breeding race of speedy, staying, weight-carrying thoroughbreds possessing the necessary jumping temperament which will enable them to hold their own across country. In other words, an attempt is being made to segregate out of the present thoroughbred a distinct breed with the qualities of a weight-carrying hunter; a breed that may not only be relied upon to breed true, but which will at the same time give more uniform and definite results when used for crossing purposes.

For the country generally this latter point is the most important of all, for the stallions of such a breed might with advantage take the place of the present Premium stallions, which, by reason of their variable nature, at present necessarily yield such mixed results, to the disappointment and loss of all concerned.

METHODS.

A careful study of the parents and relatives of weight-carrying winners of long-distance steeplechases in England and Ireland during the last few years led Major Hurst to the discovery that the material for such a breed is already in existence. This discovery of the true breeding 'chaser was announced at the Portsmouth meeting of the British Association for the Advancement of Science in August last, and also at the International Conference of Genetics held in Paris in September. A detailed account of these researches is being published in the report of the Burbage Experiment Station for 1911.

PURCHASES.

Little difficulty has been found in securing the true-breeding females required for the experiment, and the following animals have been purchased:—

Ballymacarney (Royal Meath—Cinnamon).
Frigate (Red Prince II.—Athela).
Breemount's Pride (Kendal—Mavourneen).
Revolving Light (Red Prince II.—Hawkeye).
A two-year-old filly out of a Hackler mare by Creangate.
A yearling colt out of a Hackler mare by Creangate.
A yearling colt out of Breemount's Pride by Missel Thrush.

Two of the brood mares will be with Major Hurst at the Burbage experiment station, Leicestershire; and the remainder with Captain Part at Haresfoot, Berkhamsted, Hertfordshire.

In regard to the true-breeding males a temporary difficulty has arisen, because, owing to the common practice of cutting the colts put to chasing, it has been found impossible to find a true-breeding stallion for this season's services. Such suitable true-breeding males as Cackler (since dead), Rathnally, Jenkinstown, Ballymacad, Ballymadun, Ballyhist, Carder, Covertcoat, Flaxseed, and Shanawan are all unfortunately unavailable, for the simple reason that they have been added to the list of geldings. For the present season, therefore, the true-breeding females will have to go to the alternative stallions, St. Aidan and Perigord; these matings may be expected to give about one-half of the foals of the kind required.

An interesting point may be noted that a leading feature of the scheme is that all the stock bred in Captain Part's experiments will be trained and raced in

order that the progeny may be tested thoroughly and practically.

The operations and results of this experiment will be more than interesting; they will be instructive, and even if in time to come they prove abortive, the experiment wili have been well worth making, if it only demonstrates that Mendelism is inapplicable for the purposes in view. If, however, success follows, then an opening will be provided to breed for definite results on a larger scale.

Rapid Detection of Negri Corpuscles.

Martiri (*Rif. Med.*, June 5th, 1911) recommends the following method: A small piece of the cornu ammonis, either fresh or fixed in alcohol, is placed in a small porcelain dish, triturated with six or seven drops of pure neutral glycerine until it attains the consistency of a homogeneous paste. To this paste is added two drops of 0·30 per cent. solution of marine blue in absolute methylic alcohol, and the whole mixed, and a few seconds later one drop of a saturated ethylic alcohol solution of eosin is added. The preparation is then creamed in the usual way; the Negri corpuscles show up as violet objects inside the blue nervous cells. —*B. M. J.*

The Effect of Calcium upon growth of Bacteria

Kindborg, of Bonn, has been investigating the possible effect of calcium upon the growth of certain bacteria, and reports (*Berlin. Klin. Wochenschr.*) his results. He has introduced calcium in varying proportions into the culture media (glycerine agar) in which the organisms were grown; and has found that pneumococci, staphylococci, and coli, typhoid, tubercle, and diphtheria bacilli grew distinctly more luxuriantly upon media containing calcium than upon ordinary media. This increase in the luxuriance of growth was most marked in the media containing the highest proportions of calcium.

The author remarks that if, as is maintained in the case of tuberculosis, the assimilation of calcium by the patient exercises a favourable influence upon the course of the disease, this must be attributed to the effect of calcium upon the body tissues, not upon the bacteria. He concludes that, in the cultivation of bacteria which grow feebly upon the usual media, an attempt with a medium to which calcium has been added is advisable. —(*Berliner Tier. Woch.*)

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donation to the College funds from:

Mr. A. W. Reid, Bromley, Kent	£1	1	0
Amount previously acknowledged	9	9	0
	£10	10	0

Nearly all those people who are interested in keeping, breeding and handling live stock use from time to time various disinfectants, insecticides, taeniafuges, anthelmintics and medicines, and those who wish to keep their stock healthy may well consult the Izal Veterinary Handbook. This small book gives an account of the precautions necessary to avert or remedy the ills which beset stable, kennel and poultry yard. It is frankly an advertisement of the various Izal disinfectant preparations, which have gained the highest awards obtainable in open competition, but it is something more than that, and readers will find in it much useful information. It will be forwarded free of charge to any address on receipt of a postcard, addressed to Messrs. Newton, Chambers and Co., Thorncliffe, near Sheffield.

BIBBY'S BOOK ON MILK. SECTION IV. BOVINE TUBERCULOSIS: CAUSE, CURE, AND ERADICATION. A Summation of Material Facts and Eminent Opinions for the Use of Farmers, Cattle-owners, Milk Producers, Veterinarians, Students, and Others. With appendices on the diseases which simulate tuberculosis, actinomycosis and Johne's disease; also appendices on calf mortality and the destruction of rats, and a glossary of technical words. With 80 illustrations, including 11 full-page coloured plates and 35 portraits of eminent authorities. First Edition. Pp. xvj. + 459. Price ten shillings net. Published by J. Bibby and Sons, Feeding Experts, Liverpool.

This volume being suited for popular rather than professional readers, does not call for a lengthy review. It is one section of a series of seven volumes which Messrs. Bibby, the well-known manufacturers of feeding stuffs, are preparing; the whole being designed to form a complete guide to the large and very complicated question of milk production. Tuberculosis is certainly well worthy of a separate volume in such a series; and the volume now issued will be a very valuable popular educator upon the subject.

The nature of the book is well indicated by its voluminous subtitles. It is not so much an original work as a careful and comprehensive compilation of the views of the chief authorities of the world upon bovine tuberculosis. Every department of the subject is covered upon broad lines—the causation and importance of the disease, the relationship of human and bovine tuberculosis, the symptoms and lesions of the disease in cattle especially; the infection of dairy products, the communicability of bovine tuberculosis to man, the economic aspect of the bovine disease, and the measures for its limitation and eradication, the last being dealt with especially fully.

The work of selection and arrangement has been well done; and the whole work forms an excellent survey of modern knowledge and opinion of the subject. It will be valuable to many readers, and perhaps most so to the educated man who, with no professional knowledge of the subject, is keenly interested in it. Though remarkably free from abstruse technicalities, it neverthless takes the reader more deeply into the subject than many laymen will care to go. On the other hand, so much of its matter is common knowledge within our profession that its chief use to the veterinarian is that he may not otherwise possess the same amount of fact and opinion enclosed within one cover. It is pre-eminently a book for the educated non-professional reader; and there are many such who will find it invaluable. Its publication is a welcome sign of the times.

W. R. C.

OBITUARY.

Mr. T. H. CLAPP, V.S., Hampton Villa, 4 Westcliffe Gardens, Herne Bay, died on Feb. 20th, from hemiplegia, following nephritis. Aged 66 years.

Veterinary Societies—Addresses.

NATIONAL VETERINARY BENEVOLENT & MUTUAL DEFENCE SOCIETY.

Pres: Mr. W. A. Taylor, F.R.C.V.S., Brick-st, Manchester
Treas: Mr. J. B. Wolstenholme, F.R.C.V.S., Quay-street, Manchester
Hon. Sec: Mr. G. H. Locke, M.R.C.V.S. Grosvenor Street, Oxford-st., Manchester

VICTORIA VETERINARY BENEVOLENT FUND.

Pres. W. Freeman Barrett, Esq. Fountain Court, Templ , E.C.
Hon. Sec. & Treas: Mr. W. Shipley, F.R.C.V.S. South Town, Great Yarmouth.

Veterinary Societies—Addresses (continued)

ASSOCIATION OF VETERINARY OFFICERS OF HEALTH
Pres: Mr. J. G. Reynard, M.R.C.V.S., Perth
Hon, Sec. & Treas. Mr. A. M. Trotter, M.R.C.V.S., Moore Street, Abattoir, Glasgow

BORDER COUNTIES V.M.S.
Pres: Mr. J. W. Hewson, M.R.C.V.S., Wigton
Hon. Sec. (pro tem.): Mr. F. W. Garnett, M.R.C.V.S., Dalegarth, Windermere
Meetings, Second Friday of Feb., June, and October

BRITISH COLUMBIA V.M.A.
Pres: Dr. Gibbons, M.R.C.V.S., Vancouver,
Hon. Pres: Dr. Hamilton, M.R.C.V.S., Victoria.
Sec., Treas., Registrar. Dr. T. Jagger, V.S., Vancouver.

CAPE OF GOOD HOPE V.M.S.
Pres. Mr. J. D. Borthwick, M.R.C.V.S., Cape Town
Hon. Sec. & Treas. Mr. R. W. Paine, F.R.C V.S.

CENTRAL V.S.
Pres. Mr. R. J. Foreman, M.R.C.V.S., High Cross, Tottenham
Hon. Sec: Mr. H. A. MacCormack, M.R.C.V.S., 122 St. George's Avenue, Tufnell Park, N.
Meetings, First Thursday in each month, except August and September, 10 Red Lion Square, Holborn, at 7 p.m.

CENTRAL CANADA V.A.
Hon. Sec: Mr. A. E, James, Ottawa

CENTRAL V.A. OF IRELAND.
Pres: Mr. J. F. Healey, M.R.C.V.S., Midleton
Hon. Sec. Mr. E. C. Winter, F.R.C.V.S., Queen st., Limerick
Treas: Mr. P. J. Howard, M.R.C.V.S., Ennis

CONNAUGHT V.M.A
Pres. Mr. D. Hamilton, M.R.C.V.S., Ballina
Hon. Sec. & Treas. Mr. A. J. Moffett, M.R.C.V.S., Galway

EASTERN COUNTIES V.M.A.
Pres: Mr. E. H. Leach, F.R.C.V.S., The Chestnuts, Newmarket
Hon. Sec. & Treas: Mr. Sidney Smith, Junr., M.R.C.V.S. 37 High Street, Lowestoft
Meetings, Second Tuesday, Feb., July and Sept.

GLASGOW V.M.S.
Pres. Principal McCall.
Hon. Sec. Mr. J. Gibson, 16 Overdale Gdns, Langside, Glas.

VET. MED. ASSN. OF IRELAND.
Pres: Mr. J. Howard, M.R.C.V.S., Ennis
Hon. Sec: J. J. O'Connor, M.R.C.V.S., R.V. Coll., Dublin
Hon. Treas: Prof. J. F. Craig, M.A., M.R.C.V.S., R.V. Coll., Dublin

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Hon. Treas: Mr. W. Packman, M.R.C.V.S., Bury, Lancs.
Hon. Sec. Mr. G. H. Locke, M.R.C.V.S., Grosvenor-street, Manchester
Meetings, 1st Thursday in April, June, Sept., & Dec.

LINCOLNSHIRE V.M.S.
Pres. Mr. W. W. Grasby, M.R.C.V.S., Daventry
Hon. Sec: & Treas: Mr. C. W. Townsend, F.R.C.V.S., Long Stanton, Cambridge
Meetings, Second Thursday Feb., June, and October

LIVERPOOL UNIVERSITY V.M.S.
Pres: Mr. J. T. Share-Jones, F.R.C.V.S., University, L'pool.
Hon. Secs: Prof. H. E. Annett, The University,
A. Richardson, M.R.C.V.S., 111 Arundel Avenue, L'pool.
Meetings, May, July, October, January.

VET. ASSN. OF MANITOBA.
Pres: Dr. W. R. Taylor, Portage la Prairie
Hon. Sec. & Treas: Dr. F. Torrance, Winnipeg

MIDLAND COUNTIES V.M.A.
Pres: Mr. W. H. Brooke, M.R.C.V.S., Handsworth
Hon. Sec: Mr. H. J. Dawes, F.R.C.V.S., Camden House, High-st., West Bromwich
Meetings, Second Tuesday, Wednesday, Thursday, and Friday alternately in Feb., May, Aug. and Nov

NATAL VETERINARY MEDICAL ASSOCIATION.
Pres. Mr. H. Watkins Pitchford, Govt. Bacteriologist, Pietermaritzburg
Hon. Sec. & Treas. Mr. J. B. Collyer, Vety. Inspector Natal Police, Pietermaritzburg

NATIONAL VET. ASSOCIATION.
Pres: Mr. W. Woods, F.R.C.V.S., Wigan.
Sec: Mr. William Hunting, F.R.C.V.S. London, S.W.
Treas: Prof. G. H. Wooldridge, F.R.C.V.S., Ryl. Vet. Coll., Camden Town, N.W

NORTH OF ENGLAND V.M.A.
Pres: Mr. E. R. Gibson, M.R.C.V.S. 27 Marlborough-street, Seaham Harbour
Hon. Sec: T. T. Jack, M.R.C.V.S., 3 Elmwood Ter, Sunderland
Meetings, Third Friday, Feb., May, Aug. and Nov.

NORTH OF IRELAND V.M.A.
Pres: Mr. H. McConnell, M.R.C.V.S., The Mall, Armagh
Hon. Sec; Mr. J. S. A. Jordan, M.R.C.V.S., Belfast
Hon. Treas; Mr. J. A. Thompson, F.R.C.V.S., Lurgan

NORTH OF SCOTLAND V.M.S.
Pres: Mr. W. McPherson, M.R.C.V.S., Huntly
Hon. Sec. & Treas: Mr. G. Howie, M.R.C.V.S. Alford, Aberdeen
Meetings, Last Saturday in January and August

NORTH WALES V.M.A.
Pres: Mr. O. Trevor Williams, M.R.C.V.S., Llangefni
Hon. Sec. Mr. L. W. Wynn Lloyd, M.R.C.V.S., Carnarvon
Meetings, First Tuesday, March and September

ONTARIO V.A.
Pres: Mr. J. H. Tennent, V.S., London, Ontario
Sec: & Treas: Mr. C. H. Sweetapple, V.S., Toronto, Ontario

ROYAL COUNTIES V.M.A.
Pres: Mr. E. J. Mellett, M.R.C.V.S., Henley-on-Thames
Hon. Sec. & Treas: Mr. G. P. Male, M.R.C.V.S., Reading
Meetings, Last Friday, Jan., April, July and Nov.

ROYAL SCOTTISH V.S,
Pres: Mr. Reid, M.R.C.V.S., Auchtermuchty.

ROYAL VETERINARY COLLEGE M.A.
Pres: Dr. Lander, D.Sc.
Hon. Sec: Mr. G. Gorton, M.R.C.V.S. *Assist*. Mr. T. J. Davis

SCOTTISH METROPOLITAN V.M.S.
Pres: Mr. James Peddie, F.R.C.V.S., Dundee
Hon. Sec: Mr. A. Gofton, M.R.C.V.S., Ryl. Dick Vet. Coll.

SOUTHERN COUNTIES V.S.
Pres: Mr. W. Hunting, F.R.C.V.S., London
Hon. Sec: Mr. J. Alex. Todd, M.R.C.V.S., Worthing
Hon. Treas: Mr. E. W. Baker, M.R.C.V.S., Wimborne
Meetings, Last Thursday, Mar., June and Sept.

SOUTH DURHAM AND NORTH YORKSHIRE V.M.A.
Pres: Mr. W. Awde, F.R.C.V.S., Stockton-on-Tees.
Hon. Sec. & Treas: Mr. J. H. Taylor, F.R.C.V.S. Grange Road, Darlington
Meetings, First Friday, Mar., June, Sept. and Dec.

SOUTH EASTERN V.M.A.
Pres. Mr. James Crowhurst, F.R.C.V.S., Canterbury
Hon. Sec. & Treas. Mr. Theo. C. Toope, M.R.C.V.S., 34 High Street, Dover
Meeting, Second Wednesday in May

TRANSVAAL V.M.A.
Pres: Mr. C. E. Gray, P.V.S., Box 134, Pretoria.
Hon. Sec: Mr. P. Conacher, G.V.S., Box 877, Johannesburg

WESTERN COUNTIES V.M.A.
Pres: Mr. H. E. Whitemore, M.R.C.V.S., Langport
Hon. Sec. Mr. W. Ascott, M.R.C.V.S., Bideford
Hon. Treas: Mr. P. G. Bond, M.R.C.V.S., Plymouth
Meetings, Third Thursday, March, July and November

WEST OF SCOTLAND V.M.A.
Pres: Mr. J. Macfarlane, M.R.C.V.S, 75 West Nile-st, Glasgow
Hon. Sec: & Treasr: Mr. Robert Mitchell, M.R.C.V.S., 1291 Argyll Street, Sandyford
Meetings, Second Wednesday, May, Oct. and January.

YORKSHIRE VET. ASSOCIATION
Pres: Mr. A. McCarmick, M.R.C.V.S., Kirkstall road, Leeds
Hon. Sec; Mr. J Clarkson, M.R.C.V.S., Garforth, nr. Leeds
Hon. Treas: Mr. H. G. Bowes, F.R.C.V.S., 106 Clarendon Road, Leeds